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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIROSHI SUGITATSU,
HIDETOSHI TANAKA,
TAKAO HARADA,
ITSUO MIYAHARA,
and ISAO KOBAYASHI

Appeal 2009-003565
Application 10/541,457
Technology Center 1700

Oral Hearing Held: June 9, 2009

Before CHUNG K. PAK, KAREN M. HASTINGS, and
MICHAEL P. COLAIANNI, Administrative Patent Judges

ON BEHALF OF THE APPELLANTS:

FREDERICK VASTINE, ESQ.
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The above-entitled matter came on for hearing on Tuesday, June 9, 2009, commencing at 9:55 a.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Kevin Carr, Notary Public.

JUDGE PAK: Good morning, Mr. Vastine. We're going to discuss the first case, appeal 093565.

MR. VASTINE: That's Sugitatsu. Is that correct?

JUDGE HASTINGS: Right.

JUDGE PAK: As you know, you have 20 minutes to argue this case. We have a court reporter who is going to transcribe the entire hearing.

MR. VASTINE: Sure.

JUDGE PAK: And that transcript is going to become part of the record, so you may start any time you wish.

MR. VASTINE: Okay. Let's see. Well the invention we have before us addressing the subject of a chromium containing material and particularly a method of treating it for recovery of chromium values, or least concentration of chromium values in an ore or in an iron oxide matrix. This is really -- the reduction process itself in which a carbonaceous material is used as a reducing agent for chromium recovery or concentration is known.

What the Applicants have found, there have been problems with carbonaceous reduction in this environment and that if you proceed too slowly iron oxide tends to reduce first. You consume a lot of a reducing agent or whatever, so that the separation results or concentration results that you might get, since chromium oxide reduces at a higher temperature, are not what you desire. So what the Applicants have discovered is if they take -- in this reduction process they prepared their "gamish" (mixture) so to speak, ready to fire it, that if they conduct the initial heating, by radiation

heating -- they're really going to heat it, zap it -- they add a temperature increasing rate of about 13.96°C per second. What happens is that more of a reduction towards the chromium side rather than the iron side.

And so by this method -- of course that's carried out up to a temperature of 1114°C -- so that what you now have is an improved technique of concentrating chromium values at least in a chromium oxide. I don't know actually if chromium metal may express itself out of the mixture or not. I don't know. But that's the invention. And as far as the prior art references are concerned they -- well at least the Kikuchi, Ibaraki and Takada reference, Kundrat, establish essentially what is known is that a carbonaceous material can be mixed in with the chromite ferrochromium ore or ferrochromium material and use it to reduce and the iron of course. But we know that. There is no teaching or suggestion -- Yes?

JUDGE HASTINGS: Well, the Examiner's position is each one of those references explicitly teaches and uses the word "rapidly heated" to a temperature which is about 1114 or so. In -- the Examiner's position is therefore how fast you heat that is a result-effective variable, applying some other references, so -- what is your response to that?

MR. VASTINE: Well, I beg to differ. What they have found through their experimentation is if you go with this very fast heating rate, that we were talking about, 13.65 centigrade degrees per second, you're getting an initial heat blast where you have your greatest amount of carbon with the other constituents and it's available for immediate reduction. And so you kind of front-end load this thing, if you know what I mean -- the front-end loading of the reduction rate.

JUDGE HASTINGS: No, I understand that, but I'm trying to reconcile that with the fact that the references explicitly say "rapidly heat this".

MR. VASTINE: You see that doesn't differ -- that doesn't distinguish between a rapid heating profile from room temperature all the way up to 1114°. What does that mean? That's not this. Do you see what I mean? This is a high initial rate where you are really hitting it hard and you concentrate your reducing effect on the chromium. That's what happens. That is a higher melting substance, the harder to reduce -- higher temperature. And so you have with your greatest amount of carbon there. Because if you go too long what happens is the carbon is used up in the reduction of the iron, and since chromium is still present -- chromium oxide in significant amounts – you're not really going to get any concentration effect of a reduced chromium metal. So that's the way we see it.

JUSDGE HASTINGS: Well, clearly these primary references, also that's their main goal; to reduce the chromium oxide.

MR. VASTINE: I'm sorry?

JUDGE HASTINGS: I said the primary references, that is also what their main goal is, is to reduce chromium oxide.

MR. VASTINE: Well, yeah they'll reduce it. We don't contend with that. That's why we -- reaction is known by adding a carbonaceous material to a chromite ore or whatever to reduce both. It's a matter of this concentration effect and getting, you know, preferential, upfront reduction of the higher melting material. And that's what's been achieved.

Well, in the Meissner reference, it talks about the open-hearth process in a method reducing iron ore. I don't even think it talks about

chromium. And Perry's reference is -- well it's some engineering data, but it really doesn't get to the point.

JUDGE HASTINGS: We understand your position.

MR. VASTINE: So we feel really that the prior art is very silent on that important rapid heating limitation in claim. That's basically our argument.

JUDGE PAK: Any questions?

JUDGE HASTINGS: No questions.

MR. VASTINE: Okay.

JUDGE PAK: Thank you. The case is submitted.

Whereupon, at 10:03 a.m. the proceedings were concluded.